

MS4 REQUIREMENTS AND WHAT IT MEANS TO GETTYSBURG BOROUGH



PRESENTED BY:
CHAD M. CLABAUGH, P.E.



C.S. Davidson, Inc.

Excellence in Civil Engineering

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)



NPDES PHASE II MS4 STORMWATER PROGRAM GOALS

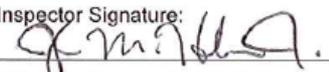
- **Reduce the discharge of pollutants to the “maximum extent practicable” (MEP)**
- **Protect water quality**
- **Satisfy the appropriate water quality requirements of the Clean Water Act**

V-4B

MS4 COMPLIANCE INSPECTION REPORT

MS4 AUDITS

➤ **DEP and EPA both have ability to perform audits of MS4 programs**

| NPDES Permit No. | Mo/Day/Yr | Entry Time | Exit Time | Inspection Type | eFACTS Inspection ID |
|---|------------|---|---|--|-----------------------------|
| PAG133596 | 08/21/2014 | 09:00 | 16:00 | DAI | 2302697 |
| MS4 Permittee Name: York City | | | | <input checked="" type="checkbox"/> PAG-13 Coverage <input type="checkbox"/> Individual Permit <input type="checkbox"/> Check here if a "joint permit" with co-permittees | |
| Mailing Address: 101 S George Street, York, PA 17401-1231 | | | | Municipality: York City | |
| Responsible Official: James Gross | | Title: Director Dep. of Public Works | | County: York | |
| Business Phone: (717) 849-2245 | | Email: JGross@yorkcity.org | | Permit Expiration Date: March 31, 2018 | |
| Co-Permittees (if applicable): | | | | Permit Renewal Application/NOI Due: October 2, 2017 | |
| | | | | Chesapeake Bay Watershed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| <input checked="" type="checkbox"/> Office Visit <input type="checkbox"/> Field Visit | | | | Discharge(s) to TMDL Waters? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| VIOLATIONS: (list below) | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| Several comments are listed below. | | | | | |
| Person Interviewed: James Gross | | Date: 08/21/2014 | Inspectors: Mike Hickman | | Date: 08/21/2014 |
| Signature: | | Phone No.: | Inspector Signature:  | | Phone No.: (717)705-6640 |
| Title: Director Department of Public Works | | | Title: Environmental Engineering Specialist | | |
| Email: JGross@yorkcity.org | | | Email: johickman@pa.gov | | |

This document is official notification that a representative of the Department of Environmental Protection inspected the above facility. The findings of this inspection are shown above and on any attached pages. Any violations which were noted during the inspection are indicated. Violations may also be discovered upon examination of the results of laboratory analyses of the discharge and review of Department records.

MS4 AUDIT COMPONENTS

- **Opening conference**
- **Office record review**
- **Staff interviews**
- **Field inspections**
- **Exit interview**

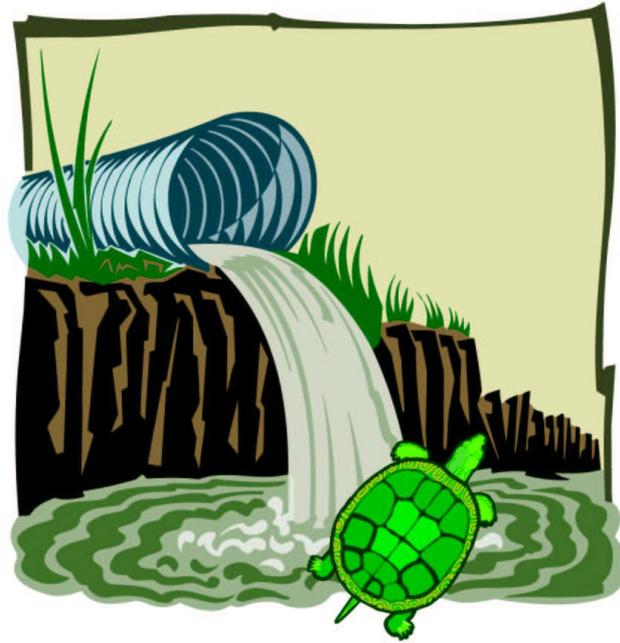
- **City of York fined \$22,853.70**
(other Municipalities also fined)

MINIMUM CONTROL MEASURES (MCM)

- **MCM #1** - Public Education and Outreach on Stormwater Impacts
- **MCM #2** - Public Involvement/Participation
- **MCM #3** - Illicit Discharge Detection and Elimination (IDD&E)
- **MCM #4** - Construction Site Stormwater Runoff Control
- **MCM #5** - Post-Construction Stormwater Management (PCSM) in New and Redevelopment Activities
- **MCM #6** - Pollution Prevention/Good Housekeeping for Municipal Operations

MCM #1: PUBLIC EDUCATION & OUTREACH ON STORMWATER IMPACTS

DIRT IN THE DRAIN



TURTLES COMPLAIN

MCM #2: PUBLIC INVOLVEMENT/ PARTICIPATION



MCM #3: ILLICIT DISCHARGE DETECTION & ELIMINATION (IDD&E)



MCM #4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL



MEMORANDUM OF UNDERSTANDING (MOU)
Between the
YORK COUNTY CONSERVATION DISTRICT
and
THE BOROUGH OF WRIGHTSVILLE

This Memorandum has been prepared jointly and agreed upon by each party for the following purposes:

- To serve as a joint commitment by the signatory parties to control accelerated erosion and to prevent sediment pollution to the waters of the Commonwealth which may result from earth disturbance activities conducted in THE BOROUGH OF WRIGHTSVILLE.
- To serve as a joint commitment by the signatory parties to ensure Best Management Practices (BMPs) are implemented on the ground to protect, maintain, reclaim, and restore water quality and the existing and designated uses of waters of this Commonwealth located in THE BOROUGH OF WRIGHTSVILLE for the benefit of the Borough's citizens and downstream water users.
- To serve as a basis for stating the role of each party in administering the Commonwealth of Pennsylvania's Title 25, Chapter 102 regulations and General -(PAG-02) National Pollutant Discharge Elimination System (NPDES) permit for Stormwater Discharges from Construction Activities.
- To assist THE BOROUGH OF WRIGHTSVILLE in meeting its's minimum control measures as required by federal PAG-13 permit for Stormwater Discharges from Small Separate Storm Sewer Systems (MS-4s). This MOU will serve to satisfy Minimum Control Measure #4 – Construction Site Runoff Control- and will assist in satisfying Minimum Control Measure #5 – Post-Construction Stormwater Management in New Development and Redevelopment.
- To serve as a basis for stating the role of each party in administering the provisions of THE BOROUGH OF WRIGHTSVILLE Post-Construction Stormwater Management Ordinance # 2012-2 and Subdivision and Land Development Ordinance # 1991-6.

I. In carrying out the intent of this memorandum, the York County Conservation District (District) will:

A. E&S Plan Reviews / NPDES Permit Processing

- 1) Invite the Borough engineer to all scheduled NPDES pre-application meetings. Attendance will be at the Borough engineer's discretion.
- 2) Complete a technical review of all E&S plans proposing 1 acre or more of earth disturbance and determine if an NPDES permit is required. Initial technical reviews will be completed within 50 calendar days of receiving a complete plan submission. Additional technical reviews will be completed within 30 calendar days of receiving a complete revised plan submission.
- 3) Complete a technical review of all E&S plans proposing 5,000 square feet to 0.99 acres of earth disturbance when required by Borough ordinance. The technical review will be completed within 50 calendar days of receiving a complete plan submission.

MCM #5: POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM)



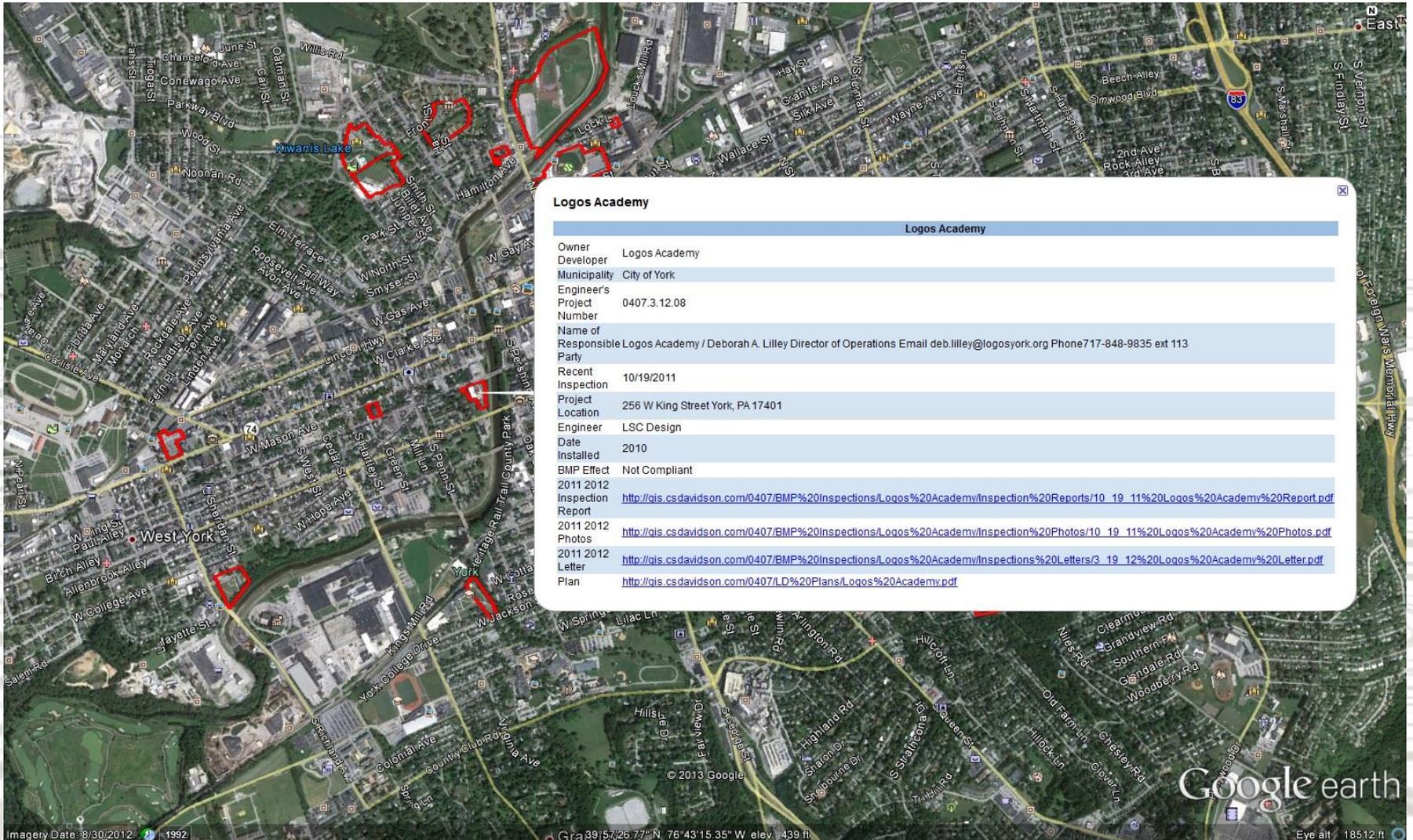
STORMWATER ORDINANCE REQUIREMENTS

- **County-wide Act 167 Plans**
- **Exemption Criteria**
- **Levels of Plan Review/Approval**
- **Required Inspections**

O&M AGREEMENTS

- **Must be recorded as part of the plan approval process**
- **Provides a legal, enforceable mechanism to ensure long term maintenance**
- **Transferable with the land**

BMP MAPPING/INVENTORY



Logos Academy

Logos Academy

| | |
|-----------------------------|---|
| Owner | Logos Academy |
| Developer | Logos Academy |
| Municipality | City of York |
| Engineers | |
| Project Number | 0407.3.12.08 |
| Name of Party | Responsible Logos Academy / Deborah A. Lilley Director of Operations Email deb.lilley@logosyork.org Phone 717-848-9835 ext 113 |
| Recent Inspection | 10/19/2011 |
| Project Location | 256 W King Street York, PA 17401 |
| Engineer | LSC Design |
| Date Installed | 2010 |
| BMP Effect | Not Compliant |
| 2011 2012 Inspection Report | http://qis.cs.davidson.com/0407/BMP%20Inspections/Logos%20Academy/Inspection%20Reports/10_19_11%20Logos%20Academy%20Report.pdf |
| 2011 2012 Photos | http://qis.cs.davidson.com/0407/BMP%20Inspections/Logos%20Academy/Inspection%20Photos/10_19_11%20Logos%20Academy%20Photos.pdf |
| 2011 2012 Letter | http://qis.cs.davidson.com/0407/BMP%20Inspections/Logos%20Academy/Inspections%20Letters/3_19_12%20Logos%20Academy%20Letter.pdf |
| Plan | http://qis.cs.davidson.com/0407/LD%20Plans/Logos%20Academy.pdf |

MCM #6: POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS



MCM #6: POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS



2018 – 2023 GENERAL PERMIT REQUIRED

- **Minimum Control Measures (MCMs) 1-6**
- **Annual Reporting**
- **Pollutant Reduction Plan (PRP)**
- **Mapping**
- **Notice of Intent (NOI)**
 - Due September 16, 2017 along with other NPDES permit requirements



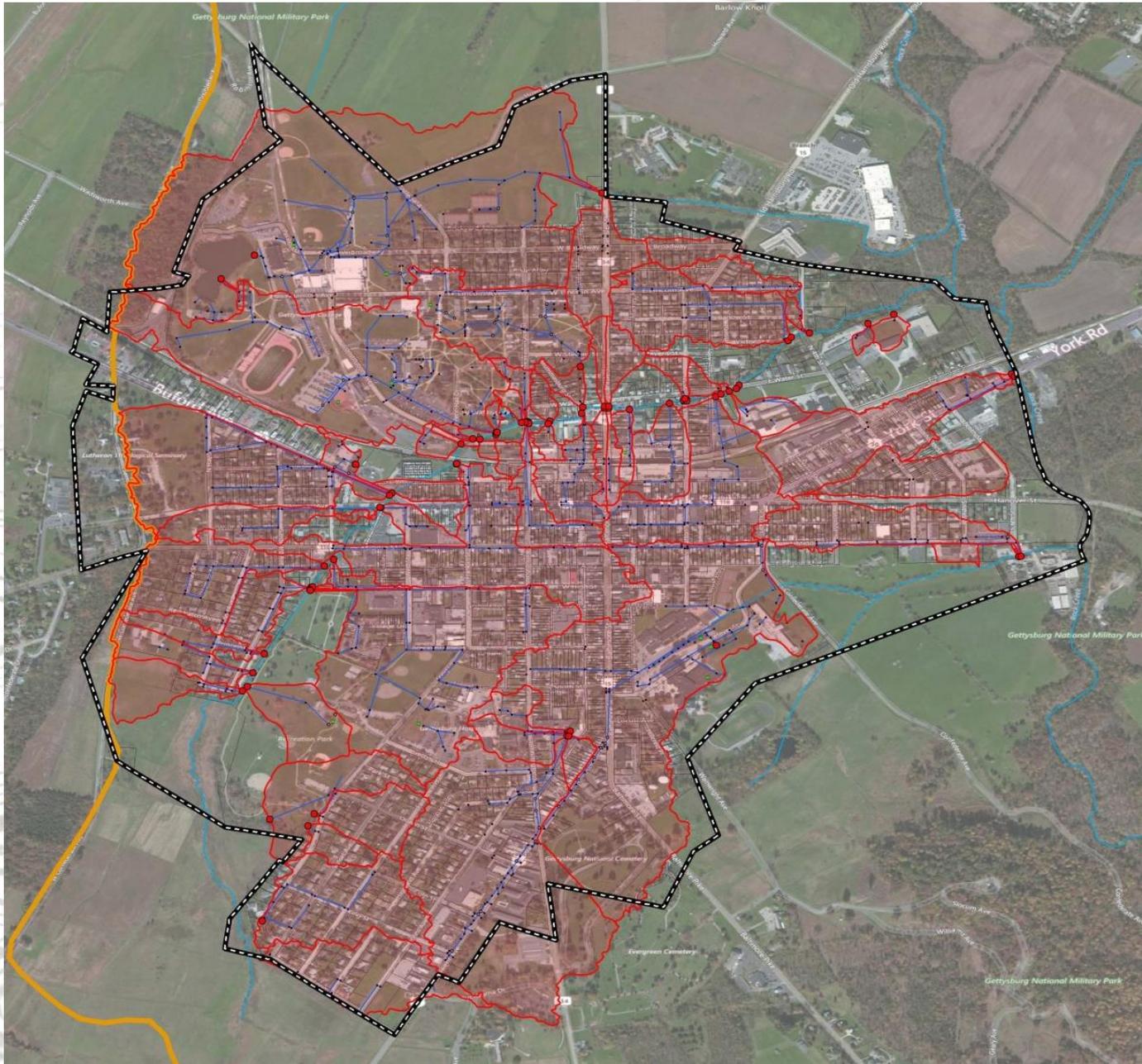
2017 PRP COMPONENTS

- **Submitting a combined Pollutant Reduction Plan**
 - Addresses local impaired water requirements and Chesapeake Bay Watershed impairments collectively
- **Report must include the following sections:**
 - Public participation
 - Maps
 - Pollutants of concern
 - Existing Loading for Pollutants of Concern
 - BMPs required to Achieve the Minimum Required Reduction
 - Funding Mechanisms
 - BMP Operation and Maintenance

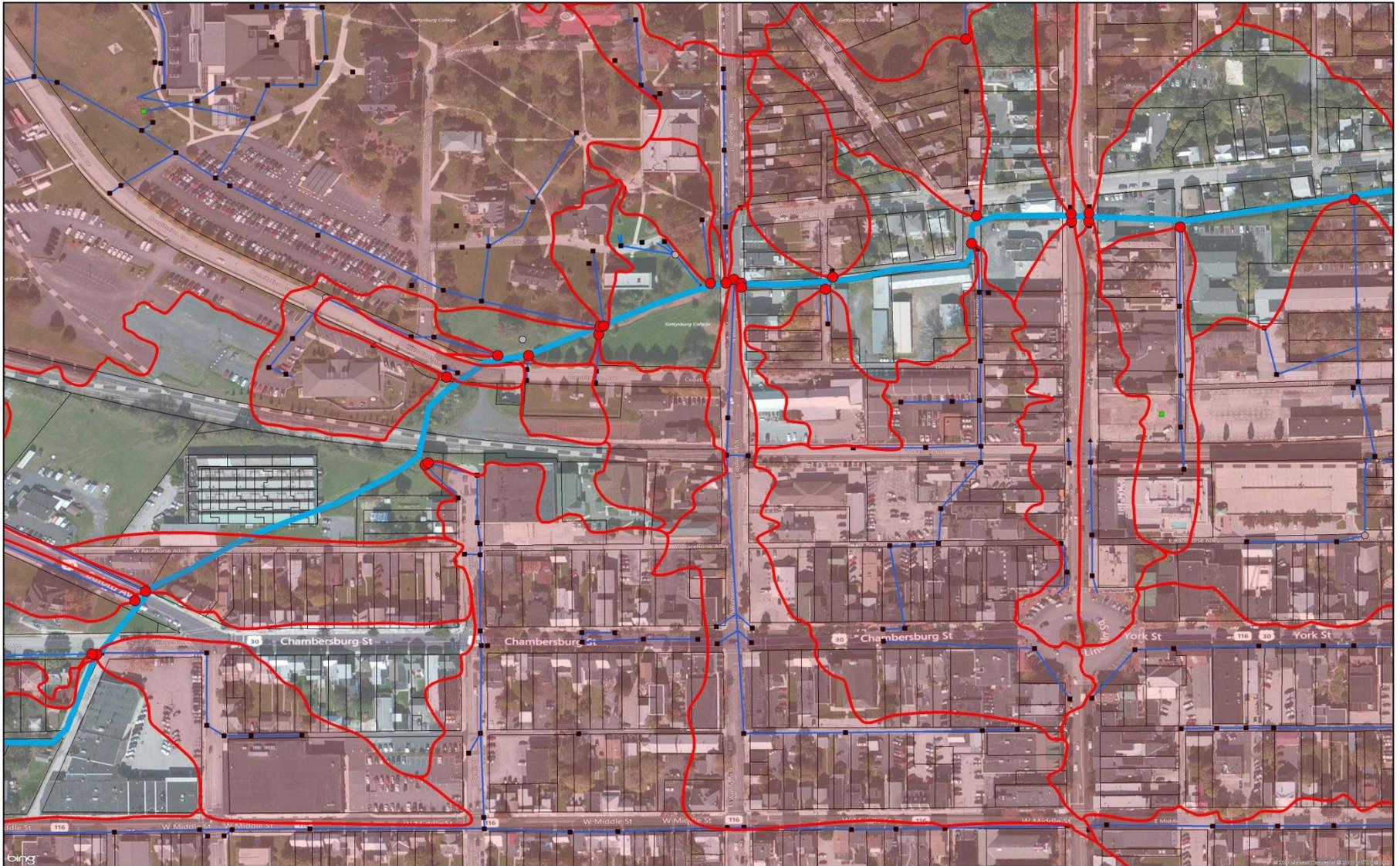
PUBLIC PARTICIPATION

- **Publish a public notice in the newspaper.**
- **Accept public comments for a minimum of 30-days.**
- **Hold a public meeting to accept any public comments regarding the plan.**
- **Include documentation of consideration of public comments in the plan.**

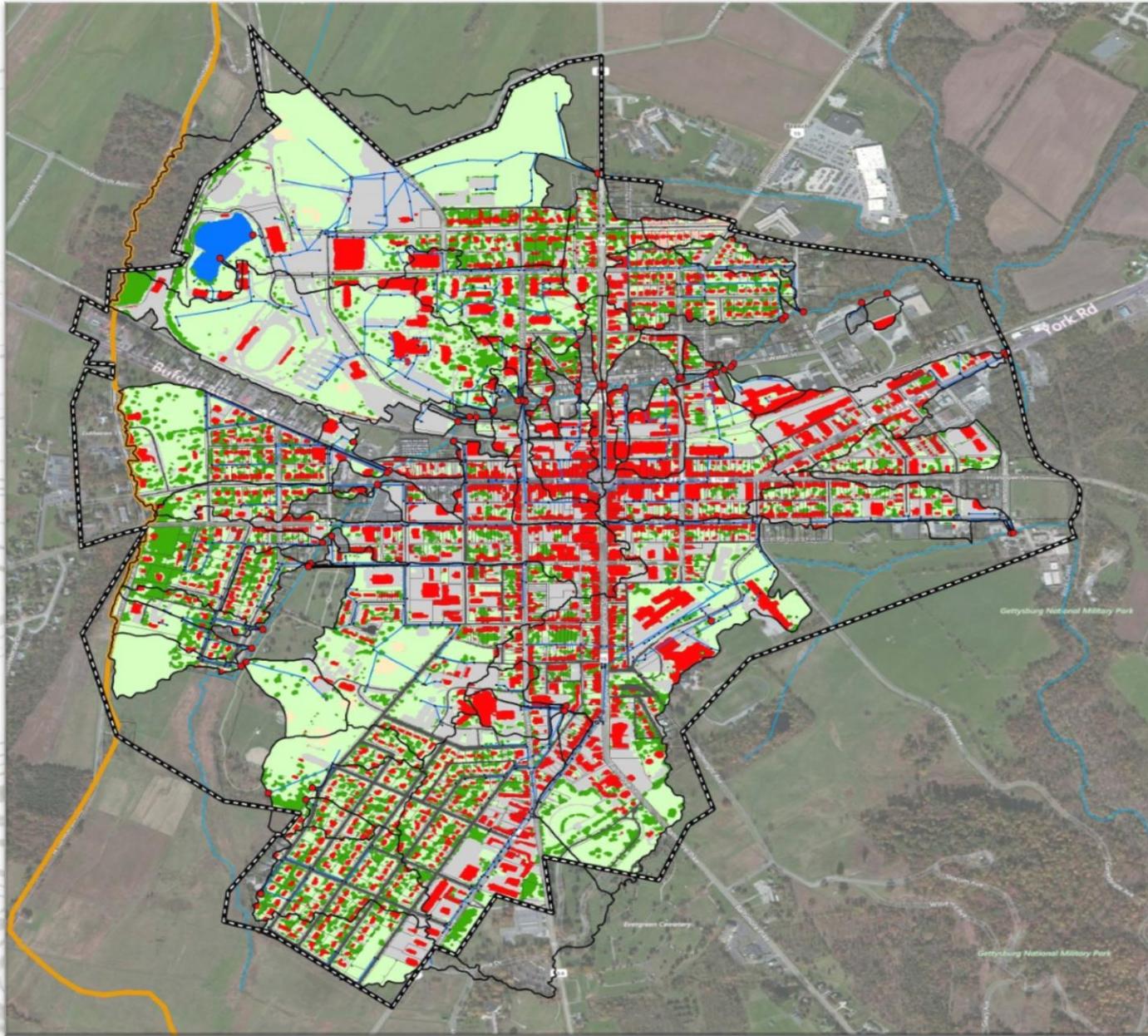
MAPPING



MAPPING



MAPPING



POLLUTANTS OF CONCERN

➤ Three (3) Pollutants of Concern:

- Total Nitrogen (TN)
- Total Phosphorus (TP)
- Total Suspended Solids (TSS) – Sediment

➤ Three (3) Impaired Streams in the Borough:

- Rock Creek
- Steven's Run
- Unnamed Tributary to Rock Creek

➤ PA DEP MS4 Requirements Table and Aggregation Table

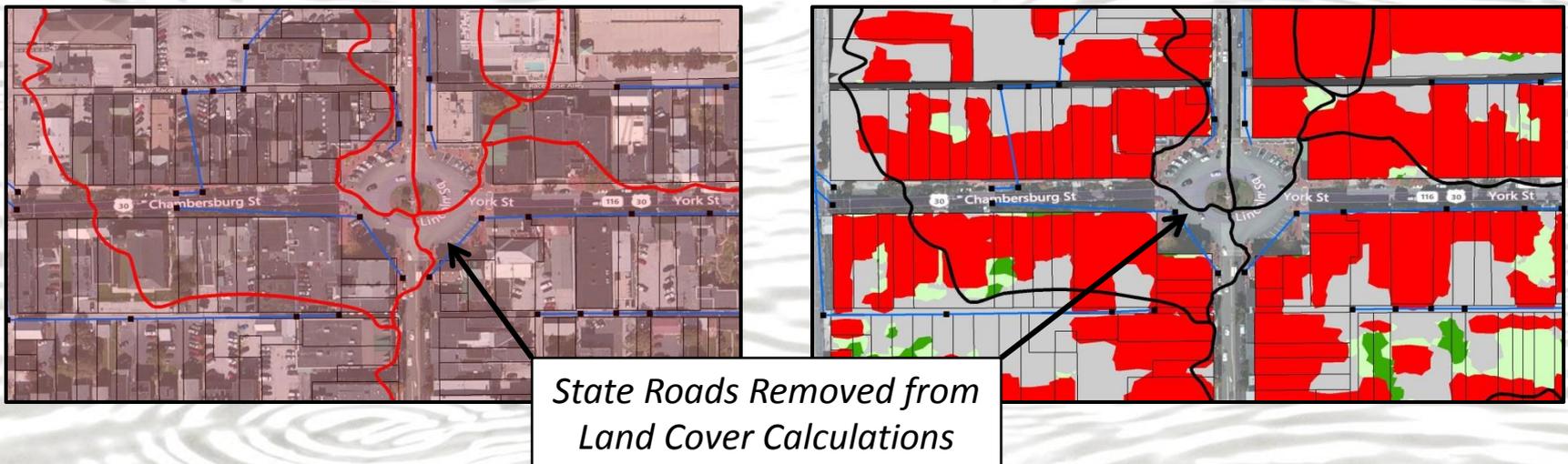
EXISTING LOADING

➤ Baseline Loading Calculated Using DEP Simplified Method

| <u>Land Cover</u> | <u>Area (ac)</u> | <u>TN lbs/yr</u> | <u>TP lbs/yr</u> | <u>TSS lbs/yr</u> |
|---------------------|------------------|------------------|------------------|-------------------|
| Impervious Area | 373 | 12,469 | 783 | 521,741 |
| Non-Impervious Area | 362 | 8,322 | 290 | 75,177 |
| Total | 735 | 20,792 | 1,073 | 596,918 |

EXISTING LOADING

- Can Reduce Baseline by Taking Credit for “Parsing” and for Existing Structural Stormwater Facilities (BMPs)
- Parse properties with existing NPDES Discharge Permit and PennDOT Right-of-Way (State Roads)



EXISTING LOADING

| Existing Structural BMP Credits | TN lbs/yr | TP lbs/yr | TSS lbs/yr |
|--|------------------|------------------|-------------------|
| Best Western Hotel | 7 | 0 | 316 |
| Future Stakes Land Development | 32 | 2 | 1,325 |
| Gettysburg College - Brua Drive | 44 | 4 | 3,625 |
| 339 Carlisle Street | 22 | 1 | 600 |
| Lutheran Seminary Historical Trail | 2 | 0 | 64 |
| Gettysburg College- Dining Hall | 4 | 0 | 168 |
| Bus Transfer Center | 5 | 0 | 203 |
| Bus Transfer Center | 4 | 0 | 356 |
| Central Energy Plant | 58 | 3 | 1,806 |
| Central Energy Plant Parking Lot | 122 | 8 | 4,993 |
| Orchard Development | 18 | 1 | 723 |
| Orchard Development | 48 | 3 | 1,958 |
| Gettysburg Hospital | 245 | 15 | 10,165 |
| West Street Plaza | 216 | 13 | 8,957 |
| Habitat for Humanity – N. 5th Street | 34 | 2 | 1,598 |
| 227 N. Washington St | 3 | 0 | 129 |
| College Union Building | 32 | 2 | 1,360 |
| Eisenhower House | 13 | 1 | 463 |
| Street Sweeping | 48 | 3 | 5,850 |
| Total Reduction Credits | 977 | 59 | 45,418 |

EXISTING LOADING

➤ Adjusted Baseline Reduction – What’s “Actually” Going into Streams

| Land Cover | Area (ac) | TN lbs./yr. | TP lbs./yr. | TSS lbs./yr. |
|-------------------------|-----------|---------------------|--------------------|--------------------------|
| Impervious Area | 373 | 12,469 | 783 | 521,741 |
| Non-Impervious Area | 362 | 8,322 | 290 | 75,177 |
| Total | 735 | 20,792 | 1,073 | 596,918 |
| Total Reduction Credits | | 977 | 59 | 45,418 |
| Adjusted Total | | 19,815 | 1,014 | 551,500 |
| Required Reductions | | TN lbs. (3%) 594 | TP lbs. (5%) 51 | TSS lbs. (10%) 55,150 |

PROPOSED PROJECTS

| Project No. | Project Name | BMP Type | Reduction Achieved (lbs. of sediment per year) |
|-------------------------|---|---|--|
| 1 | Borough Garage Rain Garden | Bioretention-Rain Garden (A/B Soils w/ Underdrain) | 1,346 |
| 2 | E. Broadway Street Improvements | Bioretention-Rain Garden (C/D Soils w/ Underdrain) | 3,125 |
| 3 | Race Horse Alley Green Street Project | Permeable Pavement and Bioretention-Rain Garden (C/D Soils w/ Underdrain) | 2,007 |
| 4 | Gettysburg Inner Loop Segment A | Stream Restoration | 14,137 |
| 5 | Wolf Alley Stream Bank Improvements | Stream Restoration | 11,669 |
| 6 | Gettysburg Area Recreational Authority Parking Lot Improvements | Bioretention-Rain Garden (A/B Soils w/ Underdrain) | 295 |
| 7 | Gettysburg Area Recreational Authority Parking Lot D Improvements | Bioretention-Rain Gardens (A/B Soils w/ Underdrain) | 543 |
| Total Reductions | | | 33,122 |

PROPOSED PROJECTS

- Required Reduction (10%) = 55,150 lbs.
- Projects 1-7 Reduction = - 33,122 lbs.
- Difference = **22,028 lbs.**
- Need additional projects to meet remaining 22,028 lbs.

PROPOSED PROJECTS

➤ Potential Projects to Meet Remaining 22,028 lbs:

- Partnership with Private Property Owners to install pervious pavement
- Stream Bank Restoration (various locations)
- Curb Side Rain Gardens (various locations)
- Culp Street Park
- Existing GARA Parking Lots Improvements



FUNDING

| | <u>Project Name</u> | <u>Cost</u> | <u>Funding Obtained</u> | <u>Percent of Required Reduction</u> |
|---|--|---------------------|-----------------------------|--|
| 1 | Borough Garage Rain Garden | \$ 18,000 | No | 2.4% |
| 2 | E. Broadway Street Improvements | \$ 65,000 | Yes | 5.7% |
| 3 | Race Horse Alley Green Street | \$ 187,500 | No | 3.7% |
| 4 | Gettysburg Inner Loop Segment A | \$ 403,707 | Yes | 25.6% |
| 5 | Wolf Alley Stream Bank Improvements | \$ 328,011 | No | 21.1% |
| 6 | Gettysburg Area Recreational Authority Parking Lot Improvements | \$ 11,625 | Yes | 0.5% |
| 7 | Gettysburg Area Recreational Authority Parking Lot D Improvements | \$ 7,625 | Yes | 1.0% |
| | Total | \$ 1,021,468 | | 60.0% |

Total to get 60% of required reductions is estimated at \$ 1,021,468

FUNDING

FUNDING ESTIMATE

Cost to Implement Projects No. 1 – 7

Funding Secured for Projects No. 2, 4, 6, and 7

Estimated Funding Needed for Projects No. 1 – 7

Estimated Funding Needed for Additional Projects

Total Cost to Meet 10% Required Reduction over Next 5 Years

Estimated Annual Cost

COSTS

\$1,021,468

- \$ 487,957

\$ 533,511

\$ 680,979

\$1,214,490

\$ 242,898

OPERATIONS AND MAINTENANCE

- **Responsibility of the Borough**
- **Varies with different BMPs**
- **Most BMPs require regular inspection**

SCHEDULE

- Present MS4 Update at Board Council Workshop Meeting **June 26, 2017**
- Present Pollutant Reduction Plan (PRP) and receive Authorization to Advertise PRP at Regular Borough Council Meeting **July 10, 2017**
- Advertise Pollutant Reduction Plan for Public Comment **July 12, 2017**
(30-day Comment Period)
- Public Meeting to Receive Public Comments at Borough Council Workshop Meeting **July 24, 2017**
- Address Public Comments **August 11, 2017 – September 5, 2017**
- Present Final Notice of Intent (NOI) Application and PRP; Motion to Approve and Submit to PA DEP at Regular Borough Council Meeting **September 6, 2017**
- Deadline to submit NOI Application to PA DEP **September 15, 2017**

QUESTIONS?



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